Am 13. November 1933 wählte ich aus einer Blütengruppe 14 möglichst neu abgehutete Blüten, bestäubte sie künstlich, fixierte (in BOUINscher Flüssigkeit) davon 5 Exemplare am 18. November, und konnte sehr gut die Keimung der Pollen an jeder Narbe wahrnehmen (Fig. 29). Jedoch gelangten dabei die Pollen schläuche noch nicht bis zu den Samenanlagen. Aus dieser künstlich bestäubten Gruppe fixierte ich 5 Fruchtknoten am 14. Dezember und fand die Embryo- und Endospermbildnng im Gange. Auch bei dem, am 9. November 1934 künstlich bestäubten und dann am 23. derselben Monat fixierten Material konnte ich gerade den Befruchtungsakt wahrnehmen. Daher ist es sicher, dass in Süd-Kiushū (in November) zwischen Bestäubung und Befruchtung etwa 14 Tage benötigt werden.

Der Schleim der Pollinien ist unlöslich in Wasser und Alkohol, aber löslich in Petrolëum, Xylol u.s.w., so dass die Pollinien, ungeachtet der häufigen Regengüsse dieses Regenwaldes aus den aufgerichteten Narben nicht abgewaschen werden. Diesen ähnliche schleimige Pollen sind auch an *Rafflesia* (nach ERNST und SCHMID 1913), *Sapria* (nach GRIFFIH 1845) und *Rhizanthes* (nach BLUME 1828, HEINRICHER 1906) zu finden. Diese Pollinien stellen ausser Anhaftung zu Insektenfüssen auch eine Anpassung an die Regengüsse dar.

種子ノ裸出スルゆり目ノ植物

中井猛之進

T. NAKAI: Liliaceous Plants with Exposed Seeds.

ゆり目 *Liliales* ニ屬スルモノデ卵細胞ガ受精後ニ子房ハ其儘發達シナイ爲メ卵子ハ成育ト共ニ子房壁ヲ破ツテ露出シテ成熟シ漿果様ノ種子ヲ作ルモノガアル。普通ニヨク知レテ居ルじやのひげ屬 *Ophiopogon* KER (*Mondo* ADANSON) (Fig. 1, 2参照)、やぶらん屬 *Liriope* LOUREIRO ト臺灣ニアルしまはらん屬 *Peliosanthes* ANDREWS (Fig. 34, 参照) ト溫室植物デアルちとせらん屬 *Sansevieria* THUNBERG トノ 4 屬約 100 種許リノ植物デアル。此種子ガ露出シテ成熟スル

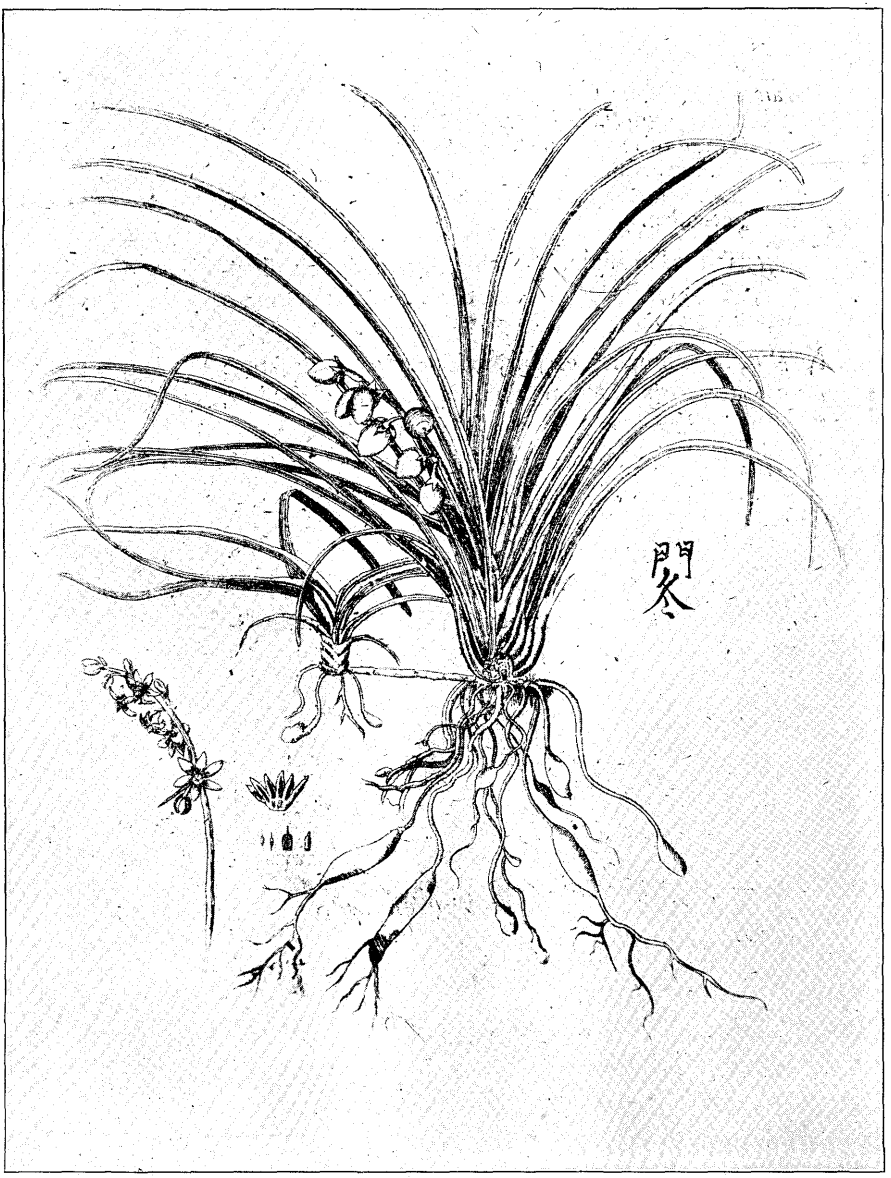

Fig. 1. KÆMPFER 氏著 Amœnitatum Exoticarum (1712 年版) ニ始メテ出タじゃのひげノ畫ヲ縮寫ス

ト云フ點ニノミ重キヲ置タノガ ENDLICHER, MEISNER, SPACH, BENTHAM & HOOKER, ENGLER 等ノ諸氏デ就中 ENDLICHER, MEISNER, SPACH ノ3氏ハ獨立ノ科 *Ophiopogoneæ* ヲ建テヽじやのひげ屬、やぶらん屬トヲ隷屬セシメタ。此意見ヲ少シ限定シタノト擴大シタノトガアル。限定シタ方ハ AGARDH 氏ノ様ニ *Ophiopogoneæ* 科ヲじやのひげ屬トやぶらん屬トノミニ限ツタ意見デアツテ後年 LOTSY 氏ガ科名ヲ現代式ニ *Ophiopogonaceæ* ト改メタトキモ AGARDH 氏同様ニ限定シテ居ル、又最近 HUTCHINSON 氏ハゆり科ノ一族 *Ophiopogoneæ* トシテ居ル場合モ同様ニ2屬ニ限ツテ居ルガ BENTHAM, HOOKER 兩氏ノ様ニ擴大スル意見ノ人々ハゆり科ノじやのひげ族ニハじやのひげ屬、やぶらん屬、しまはらん屬、ちとせらん屬、卽チ種子ノ裸出スルモノ全部ヲ入レテ居リ ENGLER 氏ハ之ヲ亞科 *Ophiopogonoideæ* ニ上シタケレドモ同様ニ4屬ヲ隷屬サセテ居ル。KRAUSE 氏ハ新ニゆり科ノ一亞科 *Mondoideæ* ヲ設ケテじやのひげ屬、やぶらん屬、しまはらん屬ノ3屬ヲ入レちとせらん屬ヲ除外シテ龍血樹族 *Dracæneæ* ニ入レテ居ル。之ハ然シ KRAUSE 氏ノ創意デハナクテ 1911 年 LOTSY 氏ガ龍血樹科 *Dracænaceæ* LINK ノ一族 *Dracæneæ* ヲ設ケテちとせらん屬ヲ加ヘタノニ「ヒント」ヲ得タノデアラウ。HUTCHINSON 氏ハ更ニ龍舌蘭科 *Agavaceæ* LOTSY ニ移シテ *Dracæneæ* 族トシしまはらん屬ハゆり科ノ一新族 *Peliosantheæ* ヲ設ケテ其下ニ編入シテ居ル。此等諸氏以前ノ分類ハ餘リ現代ノ分類學カラ離レタモノ故此處ニハ記サヌガ筆者ハやぶらん屬トじやのひげ屬トヲ合シテ1科 *Ophiopogonaceæ* ニスル點ハ AGARDH, LOTSY 兩氏ノ說ニ贊同スルケレドモしまはらん屬モちとせらん屬モ各獨立ノ科ヲ代表スルモノダト考ヘル。其理由ハ次ノ諸點ニアル。

(1) **ちとせらん屬 Sansevieria** THUNBERG.

本屬ガ *Ophiopogonaceæ* ト著シク異ル點ハ(1)3室ノ子房ノ各室ニ唯1個ノ底カラ直立スル倒生卵子ヲ有スルコトデアル。*Ophiopogonaceæ* ノ各屬デハ倒生卵子ガ子房ノ中軸ニ2個宛相並ンデ附クカラ此二ツノ群ハ根本カラ異ナツタモノト云ヘル。しまはらん科 *Peliosanthaceæ* NAKAI モふらすこ樹科 *Nolinaceæ* NAKAI モ龍血樹科 *Dracænaceæ* LINK モ卵子ノ直立底生デアル點デハちとせらん屬ニ同ジク此點ノミニ重キヲ置クトキハ LOTSY, KRAUSE, HUTCHINSON 等ノ見解ガヨイトセネバナラヌ。(2) ゆり目植物ノ花粉母細胞ハ葯間ニ4個所ニ發達スルモノデアルガちとせらん屬デハ其中デモ4個所ニ出來ル母細胞ガ縱ニ1列ニ出來ル。言ヒ換ヘルト2室ノ葯ノ各室ガ中央ニ後ニ縱ニ開ク所ヲ界シテ2部ニ分レルト葯全體トシテ左右ニ2部宛デアルカラ凡テヾ4部ニナル此各部ノ

Fig. 2. KER-GAWLER氏ガ1807年ニSIMS氏監修ノ Botanical Magazine ニ畫解シタじゃのひげヲ縮寫ス。原圖ハ彩色畫ナリ。

Fig. 3. ANDREWS 氏著 Botanists Repository 第 9 巻＝1810 年＝畫解サレタ *Peliosanthes Teta* ヲ縮寫ス。原圖ハ彩色畫ナリ。

PLATE DCV.

PELIOSANTHES TETA.

Bengal Peliosanthes, or Teta.

CLASS VI. ORDER I.

HEXANDRIA-MONOGYNIA. Six Chives. **One Pointal.**

GENERIC CHARACTER.

CALYX nullus. Corolla 6-partita, subrotata, laciniis lato-ovatis obtusis. Nectarium corollâ triplò breviore incumbente, ore angustato integro. Stamina sub ore nectarii affixa. Filamenta subnulla. Stylus crassus, brevis, obtusè trigonus, trisulcatus. Stigma sulculus tripartitus in apice styli. Germen infernm, 3-loculare loculis dispermis. Semina (immatura) obovata, erecta, fundo loculamenti affixa. Fructus bacca? subovata, carnosa.

CUP none. Blossom 6-parted, nearly wheel-shaped, the divisions broadly egg-shaped, blunt. Nectary three times shorter than the blossom, leaning inwards, the mouth narrowed and entire. Stamens affixed under the lip of the nectary. Filaments scarcely any. Pointal fleshy, short, bluntly three-sided, with three furrows. Stigma a little three-branched channel on the top of the pointal. Germ below, of three cells which are two-seeded. Seeds (while young) inversely egg-shaped, erect, and affixed to the bottom of the cells. Fruit a berry? nearly oval, fleshy.

REFERENCE TO THE PLATE.

1. A segment of the flower magnified.
2. Seed-bud and pointal magnified, with the seeds exposed.
3. Seed-bud cut transversely, magnified.

THIS very curious plant, so distinct from every genus hitherto described, was introduced from the East Indies, at the same time with the Gærtnera figured in our last number, by the late Lady Amelia Hume. The roots are fibrous and perennial, as are also the leaves, which rise from the root upon footstalks embracing one another at the base, and are of a long lance-shape with strong longitudinal nerves, which are transversely interwoven with little branching veins. The flower-stalks are round, rising to from one to two feet in height, with membranaceous bracts scattered at regular distances, and were four in number in the specimen which we have figured. The blossoms grow in a kind of raceme formed of little bunches or tufts of two to four flowers each: the footstalks are of unequal lengths with a joint near the top, and are attended by incurved bracts at the base, the lowermost bract at each tuft being always the largest. The germ is nearly top-shaped, but a little hexangular upwards. Three of the divisions of the blossom are just perceptibly broader than the other three, and both the corolla and nectary are closely pierced with transparent dots hardly visible to the naked eye, but very distinct when magnified.

We have seen a very good coloured drawing of the plant taken in India in the collection of J. Fleming, esq. which represents the fruit (which has not yet ripened in England) as a bluntly oval, fleshy berry, with the seeds in pairs as in the germ. Both this drawing and the plant received from India by Lady Amelia Hume were marked *Teta viridiflora*; Teta being perhaps (if we may hazard a conjecture) the name applied to the plant by the native Indians. However this may be, as it appears to be known in India by that name, we have retained it for the specific designation; applying to the genus, in conformity to the Linnean canons, (from πελιος, lividus, and ανθος, flos,) the name of Peliosanthes. Our drawing represents the original plant imported from India, with which we were favoured by Sir Abraham Hume, bart. last April, through the kindness of A. B. Lambert, esq. who has also informed us, from Dr. Roxburgh's MSS. in his possession, that the plant is found growing naturally about Chittagong in the East Indies. We have just seen two other species of the genus in the curious collection of T. Evans, esq. at Stepney, imported by him last Autumn from Prince of Wales's Island, of which they are natives. One of them has the leaves nearly of a blue colour; and Mr. Evans's collector informs us, that he found five or six species growing naturally in the island above mentioned, although he had not the good fortune to bring them alive to England.

Linnæus was of opinion, that there were not above ten thousand plants in the world; but above five-and-twenty thousand have already been described, and ten thousand probably yet remain to be added to the number!

Fig. 4. ANDREWS 氏ガ 1810 年ニ圖解シタ *Peliosanthes Teta* ノ原記載ヲ縮寫ス。

中央ニあふひ科 *Malvaceæ* ノ様ニ縦ニ長ク1列ノ母細胞ガ出來ルケレドモ *Ophiopogonaceæ, Peliosanthaceæ, Dracænaceæ* (*Nolinaceæ* デハ未研究) デハ各部ニ縦ニ多列ニ出來ル。此多列ニ出來ルコトハゆり目凡テニ共通ノ點デアルカラ此點カラ見ルトちとせらん屬丈ケハゆり目中ノ異分子ト云ヘル。(3) ちとせらん屬ノ花絲ハ葯ノ基ニツク (basifix) ケレドモやぶらん科デハ葯ノ背面ニツク (dorsifix). (4) ちとせらん屬ノ莖ハ地上ヲ匍フカ又ハ直立シ多肉デアリ其レカラ多肉多纖維ノ刀劍狀又ハ圓筒狀ノ葉(圓筒葉ハ然シ固定シタモノデハナイ。例 *S. cylindrica*) ガ出ルガ *Ophiopogonaceæ* デハ細イ地下莖ガ出來テ根ニハ塊狀部ヲ作リ葉ハ狹長デ肉質デナク 1/2 ノ葉序ヲナシテ居ル。

以上ノ様ナ區別ガアルカラ、ちとせらん屬ハ假令露出スル種子ヲ有シテモ同ジ露出スル種子ヲ有スル *Ophiopogonaceæ* トハ全然異リタル群即チ一科**ちとせらん科 Sansevieriaceæ** ヲ代表スルモノト見ル方ガヨイ、又之ヲ龍血樹科ニ加ヘル Lotsy, Krause, ナドノ說ニモ贊成ノ出來ナイノハ龍血樹科デモふらすこ樹科デモ果實ハ子房ガ發達シテ龍血樹科デハ漿果トナリふらすこ樹科デハ蒴ヲナス、又双方共木本植物トナル、Hutchinson 氏ハ子房下位ノ龍舌蘭科 *Agavaceæ* Lotsy ニ加ヘテ居ルガ其ハ餘リニ緣遠イモノデアツテ批評ノ限リデハナイ。Endlicher 氏ハゆり科ノ亞科 *Aloineæ* ヲ作ツテ之ヲ蘆薈屬ト一所ニシテ居ルガ是モ大キナ誤デアル。蘆薈屬ノ一群ハ葉ハ多肉デアルケレドモ葉肉組織ガ全然異ルシ卵子ハ多數子房ノ中軸ニツキ果實ハ胞背裂開ヲスル蒴トナル上、花粉母細胞ハ同時分裂 Simultane Theilung ニ依ツテ4分胞子ヲ作ルモノデアル。卽チ他ノゆり目ノ類デハ先ヅ2ツニ裂レタノガ更ニ2ツニ裂レルカラ所謂逐次分裂 Sukzedane Theilung ヲスルカラ蘆薈屬ハ *Asphodelinæ* ト共ニゆり目中ノ例外物デアル、其故 Endlicher 氏ノ分類モ不自然ト謂ハネバナラヌ、Lindley, Spach 兩氏ノ如キハきじかくし群 *Asparageæ* ニ加ヘテ居ルガきじかくし群ハ僞枝 Cladodium ヲ有スル丈ケデモ根本カラ異ナルカラ是亦問題デハナイ。ちとせらん科ノ特徵ハ次ノ様ナモノデアル。

Sansevieriaceæ Nakai, nom. nud. in Journ. Jap. Bot. XII. no 3, 145(1936).

Syn. *Liliaceæ* B. *Hemerocallidea* Bartling, Ord. Nat. Pl. 50(1830), pro parte.
Liliaceæ 6. *Asparageæ* Lindley, Nat. Syst. Bot. 354 (1836), pro parte.
Liliaceæ subord. III. *Aloineæ* Endlicher, Gen. Pl. 143(1836), pro parte.
Smilaceæ Trib. *Asparageæ* Bartling apud Spach, Hist. Vég. XII, 209 (1846), pro parte.

Liliaceæ Trib. III. *Ophiopogoneæ* BENTHAM & HOOKER, Gen. Pl. III, 678 (1883), excl. *Liriope* & *Ophiopogon*.

Liliaceæ VIII. *Ophiopogonoideæ* ENGLER in ENGLER & PRANTL, Nat. Pflanzenfam. II 5, 85 (1889), excl. *Liriope* & *Ophiopogon*.

Dracænaceæ-Dracæneæ LOTSY, Stammesg. III i, 750 (1911), pro parte.

Liliaceæ F. *Dracænoideæ* WETTSTEIN, Handb. Syst. Bot. 3 Aufl. 869 (1924), pro parte; 4 Aufl. II, 987 (1935).

Liliaceæ-Dracænoideæ-Dracæneæ KRAUSE in ENGLER, Nat. Pflanzenfam. 2 Aufl. 15 a, 356 (1930), pro parte.

Agavaceæ Trib. 2. *Dracæneæ* HUTCHINSON, Fam. Flow. Pl. II, 153 (1934), pro parte.

Rhizoma crassum erectum vel supra terram repens. Folia sessilia carnosa et fibrosa ensiformia vel teretia spirali-collocata, basi leviter vel vix vaginantia. Scapus indivisus. Flores racemosi in quaque bractea 1–pauci pedicellati, cum pedicello articutati. Tepala 2–serialia basi tubuloso-connata, limbis sub anthesin recurvis. Stamina 6 exerta tubo perigonii sub tepala affixa. Antheræ angustæ dorsifixæ biloculares laterali-longitudine dehiscentes. Cellulæ archisporarum in quoque quadrato antherarum longitudine 1–seriales. Tetrasporæ successive evolutæ. Ovarium superum triloculare. Ovulum in quoque loculo ovarii solitarium basifixum anatropum, dichlamydeum. Stylus elongatus, deciduus. Stigma indivisum. Ovarium post anthesin nunquam accrescens ita semina mox exposa in maturitate drupacea in quoque pedicello 1–3 et si 2–3 basi conniventia. Albumen carnosum. Embryo cylindricus in medio albuminis positus.

Familia monotypica : *Sansevieria* THUNBERG, Prodr. Fl. Cap. I, 65 (1794).

Species 62 in Africa tropica, Zeylania, India orientali, Himalaya, et Burma endemicæ.

(2) しまはらん屬 Peliosanthes ANDREWS.

本屬ハ基生直立倒生ノ卵子ヲ有スルコトハちとせらん屬ニ似テ居ルガ次ノ様ナ大キナ且ツ數多キ點デ區別ガアル。

(1) 3室ノ子房ノ各室ニハ必ズ2個宛ノ直立ノ卵子ガアル。(2) 花柱ハナク柱頭ハ 3叉シ永存性デアツテちとせらん屬ノ様ニ丸キ柱頭ガ花後落チル細長イ花

柱ノ先ニ出ルノトハ大ニ異ル。(3) 地上莖ガナクテ地下莖ノミガアル。(4) 葉ハ長キ葉柄ヲ有シ 1/2 ノ葉序ヲナシテ地下莖ニツキ葉柄ノ基ハ鞘狀トナリテ內側ノ葉柄ヲ包ム、葉身ハ縱ノ主脈毎ニ折リ疊ム。(5) 花被ハ廣鍾狀ヲナシ裂片ハ輻狀ニ展開スル。(6) 花絲ハ相癒合シテ花筒ノロデ輪ヲナシ其輪ノ端ニ卵形ノ 6 個ノ葯ガツキ葯ハ內側ニ開ク。(7) 花粉母細胞ハ葯ノ 4 部ノ各ノ中央ニ縱ニ多列ニ發生ス。(8) 子房ハ半上位。(9) 胚ハ基部ガ胚乳カラ露出シ先ノ尖ツタ部分丈ケガ胚乳中ニ突入シテ居ル。

以上ノ諸點デちとせらん科ニ加ヘルニハ餘リ根本カラ異リ過ギルカラ矢張リしまはらん科 *Peliosanthaceæ* NAKAI ヲ建テルガヨイ。本科ノ記相文ハ左ノ通

Peliosanthaceæ NAKAI, nom. nud. in Journ. Jap. Bot. XII, no. 3, 145 (1936).

Syn. *Colchicaceæ* BARTLING, Ord. Nat. Pl. 51 (1830), pro parte.

Ophiopogoneæ ENDLICHER, Gen. Pl. I, 156 (1836), nom. nud., pro parte; MEISNER, Pl. Vasc. Gen. I, 404 (1836), pro parte ; SPACH, Hist. Vég. XII, 210 (1846), pro parte.

Liliaceæ Trib. III *Ophiopogoneæ* BENTHAM & HOOKER, Gen. Pl. III, 678 (1883), pro parte.

Liliaceæ VIII *Ophiopogonoideæ* ENGLER in ENGLER & PRANTL, Nat. Pflanzenfam. II, 5, 84 (1889), pro parte.

Liliaceæ-Mondoideæ KRAUSE in ENGLER, Nat. Pflanzenfam. 2 Aufl. 15 a, 376 (1930). pro parte.

Liliaceæ Trib. 14. *Peliosantheæ* HUTCHINSON, Fam. Flow. Pl. II, 94 (1934).

Rhizoma hypogæum repens. Folia disticha; petioli elongati basi vaginantes imbricati; laminæ plicatæ. Scapi foliis breviores, racemesi. Flores hermaphroditi, pedicellati, in quaque bractea 1–pauci cum pedicellis articulati. Perigonia basi tubum connata et ovario plus minus affixa, late campanulata, limbis radiatis. Stamina 6 ; filamenta in fauce perigonii annulari-connata apice cum antheris ovatis introrsis 6 instructa. Archisporæ in quoque quadrante antherarum ∞-seriales, in tetrasporas ordinatim divisæ. Ovarium semisuperum triloculare. Ovula basifixa in quoque loculo ovarii 2, anatropa, erecta, dichlamydea. Stigma sessile trifidum persistens. Semina exposa

vulgo 1, maturitate drupacea, testa carnosa. Embryo oblongus apice in albumen carnosum intrusus.

Familia monotypica : *Peliosanthes* ANDREWS, Bot. Reposit. IX, t. 605(1813).

Species 28 in India orientali, Himalaya, Burma, Archipelagine et Peninsula Malayæ. Philippine, China, et Formosa endemicæ.

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ミクロネシヤ産たこのき圖說 (其一)

金 平 亮 三

R. KANEHIRA: Icones Pandanorum Micronesicorum (I)

The flora of Micronesia is very rich in forms of *Pandanus*, up to date 41 species, 6 varieties being recorded of which about 39 species and 6 varieties are endemic. The species are difficult to identify, the diagnostic characters being principally found in the syncarps and phalanges. The phalange characters vary even in the same syncarp, it being essential to determine the specific characters common to all the phalanges forming an individual syncarp. It is practically impossible to identify the species of *Pandanus* by des-